

# NemID – Danish National eID and digital signature scheme

**Published On:** 17 June 2015

**Organisation:** Danish Agency for Digitisation

**Country:** Denmark

**Level of government:** Central government

**Sector:** General public services

**Type:** Digital, Public Service

**Launched in:** 2010

**Overall development time:** 37 months

**Link to the innovation's website**

**Like this innovation**

0 persons like this innovation

# Description

---

NemID is a national electronic ID and digital signature infrastructure that has been developed in close cooperation with the banking sector and is operated by a private provider for the government and Danish banks. The system, which is provided free of charge to Danish citizens, offers a common identification method for citizens to access both public and private services.

The NemID itself is a credit card sized card that provides a single use password of six numeric digits which is used in conjunction with a traditional username and password combination to sign onto services securely and electronically. It was developed as an improved version of a prior identification system and offers a simpler procedure (single sign in without the necessity of other hardware or certificates). NemID provides a uniform way to identify citizens, companies and employees to any digital service, contributing to significant savings.

---

## Why the innovation was developed

The national strategy for e-government in Denmark requires easy, unambiguous and secure identification of citizens, businesses and employees. This includes the ability to sign electronic documents to give them full legal value in order to support digital government. In order to maximise the diffusion of such capabilities, it was decided that a solution should be provided to citizens free of charge.

---

## Objectives

Improve access, Improve effectiveness, Improve efficiency, Improve service quality, Improve user satisfaction

- Simplify log-in procedure for users concerning both public and private services by providing one single system.
  - Reduce costs when establishing new secure services through standardisation of identity management and log on procedures.
  - Improve former version of digital identification scheme.
  - Provide e-government to the majority of citizens, thus meeting the goals of the national e-government strategy.
- 

## Main beneficiaries

Businesses, General population, Government bodies, Government staff

- All Danish citizens aged 15 and above.
  - Public and private entities using NemID for identification.
- 

# Results

---

## Efficiency

- Enabled replacement of several other ID access systems through NemID's one single system.
  - Savings estimates for a single agency alone (the Danish Tax Agency) amount to several million Euros annually.
- 

## Service quality

### Accessibility:

- Increased coverage of electronic ID and digital signatures to over 80% of the eligible population.
  - More than 1.4 billion transactions have been made from July 2010 to September 2013.
- 

## User satisfaction

- User satisfaction with NemID is substantially higher than with previous versions of electronic ID and digital signatures.
  - Satisfaction testing in September 2011: 90% of NemID users were satisfied with NemID, with 8% reported being dissatisfied.
- 

## Evaluation

No formal cost-benefit analysis performed. However NemID is continually evaluated and improved by the Management Board, which includes representatives from public and private parties.

# Development

---

## Design

- NemID replaces a previous national solution.
- The design phase focused on identifying areas where the previous solution could be improved.
- Service users have been involved from design to maintenance through interest groups such as associations for the disabled and the elderly.

Design time: 13 months

---

## Testing

This phase largely handled through tendering process.

Testing time: 6 months

---

## Implementation

### Tools used:

N/A as NemID was developed by a private company for the Danish government.

### Resources used:

- Total budget of approximately EUR 113 million over 5 years (2010 to 2015). This covers free provision of NemID to all Danish citizens and residents.
- Additionally, the Danish Agency for Digitisation has a unit with 7 full time employees (FTEs) to manage the public sector's interests in NemID and oversee it.
- External assistance by consultants (2 FTEs from 2009-2012).
- Contribution of knowledge from the Centre for Digital Signature (based on its experience as the main procurer of the digital ID solution before NemID).
- NGOs contributed by testing and evaluating NemID.
- Libraries and other organisations (e.g. for the elderly) are providing training for users.

Implementation time: 18 months

---

## Diffusion

- Scaling occurred very quickly since both public services as well as online banking were included in the NemID system.
- Diffusion to about 3.5 million users in the first 6 - 9 months after the implementation.
- The solution is now used by more than 80% of the population for online banking and to access online public services.

Diffusion time: ca. 9 months

---

## Challenges and solutions

### Challenges:

- The scale of the project including both public and private organisations resulted in a large amount of interdependencies, which had to be tendered on many levels including technical, judicial and political.
- Naturally the effects of any issues causing changes or delays would be exponential in relation to project size and complexity.

### Solutions:

- Adoption of agile development, user involvement, tight supplier management, breaking down the project into manageable chunks and sustained close collaboration with suppliers and stakeholder organisations.
  - Identify and fix issues on the go, supported by manageable deliveries and implementations in iterations enabled the project to continuously make any necessary improvements based on second order learning in the project.
  - An investment in stakeholder management should also be singled out, as this project had very influential stakeholders.
- 

## Partnerships

## National agencies and ministries

Other Public Sector

They have been involved throughout as institutions such as the Tax Agency and the Courts of Law are important users of the solution.

---

## The five Danish regions

Other Public Sector

They are responsible for health care amongst other areas and as such are key stakeholders in relation to the National electronic ID solution.

---

## Local Government Denmark

Other Public Sector

The Danish association of municipalities is a key member of the Management Board for NemID as the municipalities are the main provider of electronic services in the Danish Public Sector.

---

## Danish Bankers Association

Private sector

NemID was developed and is operated and maintained in close collaboration between the public sector and the banking sector represented by the Danish Bankers Association.

---

## Associations for the disabled and the elderly

Civil Society

Several not-for-profit organisations have been involved in the design and evaluation of NemID and organisations for the elderly, the disabled and other specific groups actively encourage the take-up by training citizens. The service users have been represented throughout the process from design to maintenance through these interest groups.

---

# Lessons Learned

---

## Lessons Learned

- Partnering Up: getting widespread use of an electronic ID scheme can be achieved by cooperating with private actors who have frequently used services, such as the banks.
  - Constant technical and security development is a must: widespread solutions must constantly work with a number of new technologies and are also a target for attacks. Therefore there must be a budget for constant surveillance and development.
- 

## Conditions for success

- It was decided to develop a national standard for eID and digital signature.
  - The public sector and all the Danish banks agreed to implement a common security infrastructure based on digital signatures.
  - The commitment to a common solution across entities in the public sector and the banking sector was a key driver in the wide dissemination.
  - The Danish digital infrastructure had a certain maturity.
    - The Central Office of Civil Registration established the centralised Civil Registration System (CRS) in 1968 creating one digital register covering the whole nation.
    - In regards to e-government an earlier solution without the same dissemination provided some experience with eID and digital signature in the Danish government.
- 

Copyright OECD. All rights reserved.